

REMARKS

The present invention is in an environment of manufacturing of large quantities of plasma display panels (PDPs) and particularly for increasing the production yield of plasma display substrates by measuring a potential performance of the protective layer during the manufacturing process of the PDP. The protective layer is formed on the surface of a dielectric glass on, for example a front panel, and to ensure a long life for the plasma display panel, it must have favorable characteristics of withstanding the potential erosion from sputtering that can occur during a discharge effect of the plasma that occur repetitively in forming each frame of an image for display.

The protective layer is also important, particularly as plasma display panel television sets have become larger, wherein it is necessary to repetitively address a greater number of pixels with potentially increased electric consumption and heat, while controlling or eliminating any noise from undesirable pre-firing or discharging of pixels.

Our present invention provides an insulating film measuring device or system for evaluating, in a manner applicable to a production line process, the properties of a protective layer, such as magnesium oxide on a PDP substrate. Thus, the formation of the protective layer can be adjusted by a feedback of the potential properties during the manufacturing process and a rejection of inappropriate properties can occur at an early stage in the process rather than dependent upon the final quality control of the finished product.

As can be appreciated, the manufacturer of the plasma display panel knows the exact chemical properties and constituent elements in protective layers such as magnesium oxide. The evaluation of the known magnesium oxide layer of the present invention is directed to determine

the performance properties of this known protective layer during a production cycle since variables occur that cannot be completely controlled in depositing the protective layer.

Claims 1-13 were rejected as being completely anticipated by *Larson et al.* (U.S. Patent No. 5,315,113).

“An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed in the prior art and that such existence would be recognized by persons of ordinary skill in the field of the invention.” *See In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 678, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988).

The Office Action specifically indicated that the terminology “operable to” represented a future employment of a device, and was not considered a present claim limitation to enable the operation of the claim element. The undersigned attorney has been informed that the USPTO has specifically directed Examiners to address this issue and in this regard, other Examiners have informed the undersigned attorney that the terminology “configured” would adequately address this issue and would require an Examiner to find such structure in the prior art.

If the undersigned attorney is wrong about the advice presented by other Examiners, I would appreciate a telephone conference to ensure that the proper merits of the present invention are adequately considered in the examination process. Likewise, the undersigned attorney would be receptive to alternative acceptable language.

The *Larson et al.* reference taught a surface analysis instrument utilizing an electron beam to generate x-rays of a particular energy band, such as aluminum K-alpha line at 1.4866 KeV. See Column 4, Lines 45-46.

Thus, as shown in Figure 1, an electron gun 16 is focused on a target anode of metal such as aluminum, having a desired small energy bandwidth. The generated x-rays 27 are then

redirected by a Bragg crystal monochromator mounted on a conventional Rowland circle 46 focusing on the specimen 14. See Column 5, Lines 14-28.

An image area in which the specimen surface is to be analyzed for the chemical species is targeted by a secondary electron detector SED 88 and can provide the image on a screen to permit the operator to align and move the specimen on the mounting stage 40 as described in Column 8, Lines 31-46. With the area or target so identified, the aluminum K-alpha line x-rays impinge on the target and cause photoelectrons to be emitted and to enter the electron energy analyzer 54, which appears to be a conventional deflector to narrow the electron energies to different trajectories that can be focused onto a detector.

As noted in Column 7, Lines 8-12, a mapping of the chemical species on the targeted area can then be accomplished.

The processing provides electron energy information and thereby information on chemical species that are present and emitting the electrons from the particular specimen pixel area 48 (FIG. 3).

The Office Action further contended with regards to Claims 3, 4, 7, 8 and 10, that an electron gun could be operated by pause or pulses and thereby enable a measurement over time of a spectrum of secondary electrons emitted from the insulating film. However, as noted in Column 8, the electron gun 98 is simply a flood gun balancer to neutralize the specimen surface to eliminate any influence of a build up of a charge.

As noted in Column 8, Lines 66 through Column 9, Line 12, periodic pausing of the imaging of the measurement cycle is not for the purpose of measuring a spectrum of secondary electrons emitted from the insulating film, but rather to remove noise resulting from electrons

from distortion of an image. The image being used to center and locate a specific target area to be addressed by the electrode x-rays.

It is believed with the amendment of our claims to remove the language "operable," that our claims more than adequately provide grounds for appreciating the specifics of our invention.

Claim 14 was rejected over a combination of *Larson et al.* in view of *Nakanishi et al.* (U.S. Patent No. 5,834,791).

The Office Action acknowledged that *Larson et al.* failed to teach that an electron density of states is measured in the valence bands of the insulating film. Actually, *Larson et al.* is interested in measuring the energy peaks or lines that are characteristic of a specific chemical species, and not measuring the emission properties of a protective layer in a plasma display substrate that is being relied upon to improve a sustain period of discharge in high definitional plasma display panels to an optimum voltage and power requirement.

The *Nakanishi et al.* reference described a semiconductor device that is capable of producing a "highly spin-polarized electron beam." This production results from an application of light with layers of a semiconductor compound to provide a strained semiconductor heterostructure. Such electron beams can be used in the field of a high energy elementary particle experiment for investigating the magnetic structure of an atomic nucleus.

Needless to say, the *Nakanishi et al.* reference represents no more than a citation that electronic density states can vary in valence bands.

Claim 26 was also rejected as being obvious over *Larson et al.* in view of *Wada et al.* (U.S. 5,723,367).

The *Wada et al.* reference was cited for teaching an insulating film mounted on a conductive substrate that can receive a negative voltage. Actually, *Wada et al.* is directed to

forming a wire pattern on a silicon substrate with the capability of having connection holes wherein a deposited aluminum wiring can be encouraged to flow to provide via holes in a purportedly advantageous manner to that of other printed circuit boards.

Claims 27 and 29-31 were rejected over *Larson et al.* in view of *Hamamura et al.* (U.S. Patent No. 6,303,932).

Hamamura et al. is directed to providing a high resolution image of a specimen in real time by detecting a secondary electron or a secondary ion emitted from the specimen by the irradiation of a focus charge particle beam. Presumably, one or more variations of the *Hamamura et al.* disclosure would replace the target imaging SED detector 88 shown in the *Larson et al.* disclosure. As such, it would not teach the features of our present invention.

The Office Action noted that a vacuum to be applied with argon ions could be utilized, purportedly to avoid damage to the film. However, the purpose of the film was to provide a target imaging, not to provide the purpose of measuring the insulating and emission characteristics of magnesium oxide as a protective layer in a plasma display panel substrate.

The Office Action contended our claim language of dependent Claims 29 and 31 were purportedly disclosed in Figure 1 in the processor 76 with an analyzing portion 74. There is no citation of any supporting disclosure in that drawing or in the specification that justifies such an interpretation.

Finally, Claim 28 was rejected over a combination of *Larson et al.*, *Hamamura et al.* and further in view of *Fries* (U.S. Patent No. 6,764,796).

Fries was cited to teach an insulating film of magnesium oxide in a photo lithography system where a plasma display is utilized to create micro and macro three dimensional structures. Basically, the plasma display device was being touted as being more reliable than a

micro mirror device for imaging of two dimensional or three dimensional micro macroscopic images.

Needless to say, such disclosure would not teach nor suggest to any person of ordinary skill in the PDP field how these references could be combined to either anticipate or render obvious our present invention.

Applicant submits that any combination of references that must be modified beyond their functions is suggestive of an unintended use of hindsight that may have been utilized to drive the present rejection. This is particularly true for an examiner who is attempting to provide a diligent effort that only patentable subject matter occurs. The KSR Guidelines do not justify such an approach. There is still a requirement for the Examiner to step back from the zeal of the examination process and to appreciate that a Patent Examiner has to wear both hats of advocating a position relative to the prior art while at the same time objectively rendering in a judge-like manner a decision on the patentability of the present claims.

As set forth in MPEP 2142,

To reach a proper determination under 35 U.S.C. §103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

Our recent discussion with Pinchus Laufer in the Office of Patent Legal Administration, who was involved in writing the Examination Guidelines for Determining Obviousness under 35 USC §103 in view of the Supreme Court decision in *KSR International Co. vs. Teleflex, Inc.* verified that the KSR decision still required a specific rationale that could not be based on hindsight for purportedly combining the elements in the prior art to meet an invention defined in the patent claims.

Mr. Laufer incorporated the following from the existing MPEP into the Guidelines.

As noted in the MPEP at §2143.02:

A rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395 (2007); *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950). (underline added)

Objectively reviewing the teachings in the principal *Larson et al.* disclosure alone or in combination with the diverse aggregation of secondary references, is indicative of potential hindsight with a search based on key words rather than teachings that would be understood and appreciated by a person of ordinary skill in this field. Webster's Dictionary has every word, but that does not make Webster the prior author of James Joyce's *Ulysses*.

The *Larson et al.* reference suggests a secondary emission detector for imaging purposes alone, and focuses a specific bandwidth of a metal (aluminum) alpha line of x-ray energy, the purpose being to determine the chemical composition of a sample. It certainly does not suggest nor teach solutions to the problem addressed by the present invention, namely improving the

production of plasma display panels by monitoring specific properties found by the present inventors in the production of a protective layer such as magnesium oxide on a PDP substrate.

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); see *KSR*, 127 S. Ct. at 1739-40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). Additionally, a reference may teach away from a use when that use would render the result inoperable. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001).

In re Icon Health and Fitness, Inc. 2007 U.S. App. Lexis 18244,
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The Office Action further did not properly consider our “means for” claim elements and specifically their functions relative to the cited references.

The MPEP §2182 states that “application of a prior art reference to a means or step plus function limitation requires that the prior art element perform the identical function specified in the claim. However, if a prior art reference teaches identity of function to that specified in a claim, then...an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function.” The “means or step plus function” limitation should be interpreted in a manner consistent with the specification disclosure. See *In re Donaldson Co.*, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994).

As noted above, the Patent Office specifically incorporated the MPEP §2143.02 subsequent to the *KSR International Co.* case. Applicant used “means for” language in, for example Claim 31, which was not properly addressed or analyzed.

Additionally, applicant's newly drafted Claims 32-35 further set forth under the sixth paragraph of 35 U.S.C. §112 "means for" elements that provide functions that are clearly distinguishable from any functions and structure suggested by *Larson et al.* or any of the secondary references.

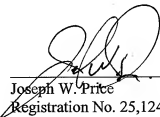
Accordingly, it is submitted that these claims in addition to the original claims, amended, more than adequately distinguish over any combination of references of record.

It is believed the case is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of this case, the undersigned attorney can be contacted at the listed telephone number.

Very truly yours,

SNELL & WILMER L.L.P.



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